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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,245	08/05/2003	Yi-Shiung Lee	59693(71987)	9440

21874 7590 10/20/2006

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EXAMINER
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GEBREMARIAM, SAMUEL A

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/635,245

Applicant(s)

LEE ET AL.

Examiner

Samuel A. Gebremariam

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Request for Continued Examination***

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/4/2006 has been entered. An action on the RCE follows.
2. The amendment filed on 8/4/2006 has been entered.

### ***Claim Objections***

3. Claims 1 and 11 are objected to because of the following informalities: the limitation of "a hollow-out area is formed between the first ground portion and one of the tie bars" appears to be an error. Looking at figure 4A for example, the hollow-out area (26) appears to be located between the first ground portions (20) not between the first ground portion and one of the tie bars as claimed. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1, 3-6, 8, 11, 13-16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Han et al., US patent application No. 2004/0061205.

Regarding claims 1 and 11, Han teaches (figs. 1 and 2) a lead frame (a lead frame for a semiconductor package) (100) (a body) having at least one die pad (106), a plurality of tie bars (refer to the insert below) connected with and supporting the die pad (connected via structure 104), a plurality of leads (102) surrounding the die pad, and a ground structure (104, refer to paragraph [0032]); wherein the ground structure comprises at least one of first ground portions (122) directly connected to the tie bars (refer to fig. 1, (the piece that makes up the tie bar also connects to 122), so as to prevent deformation of the ground structure to assure grounding performance of the semiconductor package (refer to paragraph [0037]) and wherein the first ground portions (122) are separate from each other (refer to fig. 1), and are connected to both lateral sides of the tie bars (structure 122 is formed on both lateral sides of the tie bar (structure indicated by the arrow) as shown in the insert below) and a hollow-out area (116) between the first ground portion (122) and one of the tie bars (refer to the insert below); at least one chip (108, paragraph 0036) mounted on the die pad and electrically connected to the leads and the first ground portion of the ground structure by bonding wires (200, signal wires, refer to fig. 4); and an encapsulation body (204, refer to fig. 2) for encapsulating the chip and the lead frame (100).

The recitation ground-enhanced semiconductor package, has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a

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process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

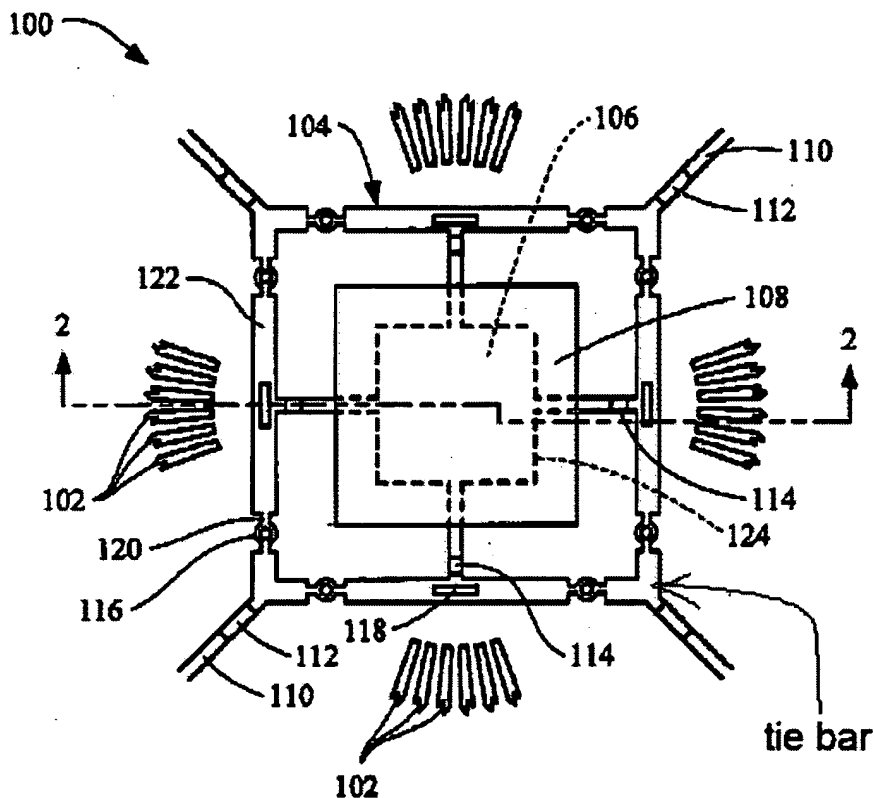


FIG. 1

Regarding claims 3 and 13, Han teaches (fig. 1) the entire claimed structure of claim 1 above including the first ground portion (122 is connected to 106 via 114) is connected to the die pad (106).

Regarding claims 4 and 14, Han teaches (fig. 1) the entire claimed structure of claim 1 above including the first ground portion (122) comprises a ground area and a connection area (region where 116 is connected to 122) which are interconnected to form a hollow-out area (116) together with one of the tie bars (refer to the insert above).

Regarding claims 5 and 15, Han teaches (fig. 1) the entire claimed structure of claim 1 above including the first ground portion (122) is not connected to the die pad (106) (no direct connection between 106 and 122, refer to fig. 1).

Regarding claims 6 and 16, Han teaches (fig. 1) the entire claimed structure of claim 1 above including the first ground portion (122) is shaped as a strip.

Regarding claims 8 and 18, Han teaches (fig. 1) the entire claimed structure of claim 1 above including each of the tie bars (refer to the insert above) is formed with at least one of the first ground portions (122).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 7, 10, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han.

Regarding claims 2 and 12, Han teaches (fig. 1) substantially the entire claimed structure of claim 1 above except explicitly stating at least one of second ground

portions connected to the die pad, wherein the second ground portions are separate from each other and from the first ground portions.

However in a different embodiment of (fig. 3) Han teaches at least one of second ground portions (302) connected to the die pad (paragraph 0043 last line), wherein the second ground portions are separate from each other and from the first ground portions (refer to fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the at least one second ground portions of the second embodiment as claimed in the structure of the first embodiment of Han in order to provide an alternative force release and stress relief structure (paragraph [0043]).

Regarding claims 7 and 17, Han teaches (fig. 3) the entire claimed structure of claim 2 above including the second ground portion (302) comprise a ground area and at least one connection area which are interconnected to form a hollow-out area together with a side edge of the die pad (empty space between 106 and 302).

Regarding claims 10 and 20, Han teaches (fig. 3) the entire claimed structure of claims 1 and 12 above including each side edge of the die pad (106) is formed with at least one of the second ground portions (302).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-8, 10-18 and 20 have been considered but they are persuasive. Applicant argues that Han does not teach or suggest a semiconductor package or lead frame in which a ground structure includes at least one first ground portion directly connected to tie bars.

This limitation is clearly shown in fig. 1, where the first ground portions (122) includes at least one first ground portion directly connected to tie bars (the piece that makes up the tie bar also connects to 122).

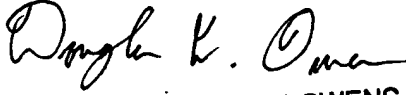
***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Gebremariam whose telephone number is (571)-272-1653. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAG  
October 15, 2006

  
DOUGLAS W. OWENS  
PRIMARY EXAMINER